CLAIMS

1. Pneumatic brake-booster comprising: a rigid casing (1); a moving partition (2) delimiting, in a sealed way, a front chamber (3) and a rear chamber (4) inside the casing (1), the front chamber (3) in operation being permanently connected to a first source of pressure (D) delivering a first pressure (Pd); a pneumatic piston (5) moving with the moving partition (2) and having a hub (6) mounted to slide in an opening (19) of the casing (1); an operating rod (7) that can move in the hub (6) between a position of rest and an extreme actuating position as a function of a resultant of forces which acts on it and which comprises an input force (Fe) exerted in an axial actuating direction (X+) directed towards the front chamber (3), and a main return force (Frp) exerted by a main spring (71) in an axial return direction (X-) that is the opposite of the axial actuating direction (X+); a plunger (9) housed in a bore (61) of the hub (6) and carried along by the operating rod; and a three-way valve (10) itself comprising a stationary annular seat (101) formed at an internal periphery of the hub (6), a moving annular seat (102), concentric with the stationary seat (101) and borne by the plunger (9) and a tubular shutter (11) concentric with the plunger and with the hub and having an annular front shut-off face (111), this front face (111) co-operating selectively with the moving seat (102) so as to isolate the rear chamber (4) from a second source of pressure (A) delivering a second pressure (Pa) higher than the first (Pd), and this front face (111) co-operating selectively with the stationary seat (101) so as to allow the rear chamber (4) to be connected to the second source of pressure (A), characterized in that the plunger (9) comprises a cylindrical body (91) secured to the operating rod (7) and a ring (92) mounted to slide axially with respect to the cylindrical body (91) between front (911) and rear (912) stops of the body, a front section (921) of

the ring (92) being engaged between the cylindrical body (91) and the bore (61) of the hub, a rear section (922) of the ring (92) forming a collar on which the moving seat (102) is defined, and the front (911) and rear (912) stops being separated from one another by a distance that allows the ring (92) an axial excursion, in that a secondary spring (12) exerts on the collar (922) a secondary return force (Frs) directed in the axial return direction (X-) and urging the collar (922) towards the rear stop (912), and in that the ring (92) and the hub (6) comprise respective first and second reversible retaining means (13, 141, 15) capable of keeping the ring (92) stationary with respect to the hub (6) in spite of the secondary return force (Frs) exerted on the ring and correspondingly of allowing the rear chamber (4) to be connected to the second source of pressure (A), these retaining means being activated by the ring being driven into the bore (61) over a travel that is at least equal to a determined minimum travel (C), and being deactivated at least on the condition that the ring (92) is driven along by the front stop (911) when this front stop moves in the axial return direction (X-) under the effect of the main return force (Frp).

2. Booster according to Claim 1, characterized in that the retaining means (13, 141, 15) comprise a pivoting key (13) straddling the ring (92) and an elastically retractable stop member (141) connected to the hub (6), this stop member intercepting the key (13) and applying a determined retaining force to it when these retaining means are activated.

3. Booster according to Claim 2, characterized in that the elastically retractable stop member (141) consists of a flexible strand of an elastic snap ring (14) secured to the hub (6).

4. Booster according to any one of the preceding claims, characterized in that the retaining means (13, 141, 15) comprise a pivoting key (13) straddling the ring (92) and an electromagnet (15) secured to the hub

(6) and selectively operated in such a way as to retain the pivoting key once the ring (92) has been driven into the bore (61) over a travel at least equal to the determined minimum travel (C).

5. Booster according to any one of the preceding claims, characterized in that the plunger (9) comprises a push-rod (94) selectively given a sliding movement with respect to the cylindrical body (91), arranged in front of the cylindrical body (91) in the actuating direction (X+), and having a shoulder (95) co-operating with the hub (6) to limit the movement of this push-rod (94) with respect to the hub (6) in the axial return direction (X-), in that the cylindrical body (91) keeps the push-rod (94) in a forwards position, in the actuating direction (X+), when the operating rod (7) is in its extreme actuating position, the cylindrical body (91) and the push-rod (94) then being in axial contact one against the other, and in that the shoulder (95) of the push-rod co-operates with the hub (6) to cause the axial contact between the cylindrical body (91) and the push-rod (94) to cease when the operating rod (7) returns to its position of rest.